

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application:

Listing of claims:

1-6. (canceled).

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7. (currently amended) A method for producing a pulp sheet comprising the steps of taking a composition for improving paper making quality wherein said composition comprises a compound and a pulp blend, wherein

said pulp blend contains a deinked pulp in an amount of 10% or more by weight in a material pulp and

said compound has a lyotropic degree as defined below of not less than 4%, and

said compound provides ~~at least two properties selected from~~ the following paper quality improving properties (i) to (iii):

(i) a standard improved bulky value of at least 0.02 g/cm³,

(ii) a standard improved brightness of at least 0.5 point, and

(iii) a standard improved opacity of at least 0.5 point;

and wherein the

$$\text{lyotropic degree (\%)} = (\alpha_0 - \alpha) / \alpha_0 \times 100$$

wherein

α is the water content in a wet sheet obtained by adding 5 parts by weight of the compound to 100 parts by weight of the pulp blend and subjecting the pulp blend to papermaking; and α_0 is the water content in a wet sheet obtained by subjecting the pulp blend to papermaking without adding the compound to the pulp blend and

adding the compound to the material pulp before or during the papermaking step and producing a pulp sheet.

8. (previously presented) The method for producing a pulp sheet according to claim 7, further comprising adding an agent that promotes fixation of the compound onto the pulp sheet, said compound being added either before or during the papermaking step.

9. (canceled).

10. (currently amended) A method for producing a pulp sheet, modified to satisfy ~~at least two properties selected from the following properties (1) to (3),~~

(1) improved bulky value of at least 0.02 g/cm³,

(2) improved brightness of at least 0.5 point, and

(3) improved opacity of at least 0.5 point

~~which comprises said method comprising:~~

adding internally a compound having a lyotropic degree as defined below of not less than 4% before or in a papermaking step into pulp slurry, and

subjecting the pulp to a papermaking:

wherein said lyotropic degree is defined by

lyotropic degree (%) = $(\alpha_0 - \alpha) / \alpha \times 100$

wherein α : the water content in a wet sheet obtained by

adding 5 parts by weight of the compound which is the paper quality improver for the papermaking to 100 parts by weight of pulp, and

~~subjecting the pulp to the papermaking; and~~ α_0 : the water content in a wet sheet obtained by subjecting pulp to the papermaking without adding the compound which is the paper quality improver for the papermaking to the pulp;

- ~~(1) improved bulky value of at least 0.02 g/cm³,~~
- ~~(2) improved brightness of at least 0.5 point, and~~
- ~~(3) improved opacity of at least 0.5 point.~~

11. (currently amended) A method for modifying a pulp sheet, which comprises internally adding a compound having the lyotropic degree as defined in ~~Claim 10~~ of not less than 4%, before or in the paper making step into a pulp slurry to provide at least two of the properties (1) to (3)

- (1) improved bulky value of at least 0.02 g/cm³,
- (2) improved brightness of at least 0.7 point, and
- (3) improved opacity of at least 0.7 point to the pulp sheet

wherein said lyotropic degree is defined by

$$\text{lyotropic degree (\%)} = (\alpha_0 - \alpha) / \alpha \times 100$$

wherein α : the water content in a wet sheet obtained by adding 5 parts by weight of the compound which is the paper quality improver for the papermaking to 100 parts by weight of pulp, and

subjecting the pulp to papermaking; and α_0 : the water content in a wet sheet obtained by subjecting pulp to the papermaking without adding the compound which is the paper quality improver for the papermaking to the pulp.

12. (currently amended) A modified pulp sheet which satisfies ~~at last two~~ the following properties selected from (1) to (3) ~~as defined in Claim 10~~,

(1) improved bulky value of at least 0.02 g/cm³,

(2) improved brightness of at least 0.5 point, and

(3) improved opacity of at least 0.5 point,

which wherein said pulp sheet is obtained by internally adding the compound having the lyotropic degree as defined in Claim 10 of not less than 4% into pulp slurry before or in the papermaking step,

wherein said lyotropic degree is defined by

$$\text{lyotropic degree (\%)} = (\alpha_0 - \alpha) / \alpha \times 100$$

wherein α : the water content in a wet sheet obtained by

adding 5 parts by weight of the compound which is the paper
quality improver for the papermaking to 100 parts by weight of
pulp, and

α_0 : the water content in a wet sheet obtained by subjecting pulp
to the papermaking without adding the compound which is the paper
quality improver for the papermaking to the pulp.

13-14. (canceled).

15. (new) A method for producing a pulp sheet comprising
the steps of

taking a composition for improving paper making quality wherein
said composition comprises a compound and a pulp blend,
wherein

said pulp blend contains a deinked pulp in an amount of 10%
or more by weight in a material pulp and

said compound has a lyotropic degree as defined below of not
less than 4%, and

said compound provides at least two properties selected from
the following paper quality improving properties (i) to (iii):

(i) a standard improved bulky value of at least 0.02 g/cm³,

(ii) a standard improved brightness of at least 0.7 point,
and

(iii) a standard improved opacity of at least 0.7 point;
and wherein the

$$\text{lyotropic degree (\%)} = (\alpha_0 - \alpha) / \alpha_0 \times 100$$

wherein

α is the water content in a wet sheet obtained by adding 5 parts by weight of the compound to 100 parts by weight of the pulp blend and subjecting the pulp blend to papermaking; and α_0 is the water content in a wet sheet obtained by subjecting the pulp blend to papermaking without adding the compound to the pulp blend and

adding the compound to the material pulp before or during the papermaking step and
producing a pulp sheet.

16. (new) The method for producing a pulp sheet according to claim 15, further comprising adding an agent that promotes fixation of the compound onto the pulp sheet, said compound being added either before or during the papermaking step.

17. (new) A modified pulp sheet which satisfies at least two properties selected from following properties (1) to (3),

(1) improved bulky value of at least 0.02 g/cm³,

- (2) improved brightness of at least 0.7 point, and
- (3) improved opacity of at least 0.7 point,

said pulp sheet is obtained by internally adding the compound having the lyotropic degree of not less than 4% into pulp slurry before or in the papermaking step

wherein said lyotropic degree is defined by

$$\text{lyotropic degree (\%)} = (\alpha_0 - \alpha) / \alpha \times 100$$

wherein α : the water content in a wet sheet obtained by adding 5 parts by weight of the compound which is the paper quality improver for the papermaking to 100 parts by weight of pulp, and

α_0 : the water content in a wet sheet obtained by subjecting pulp to the papermaking without adding the compound which is the paper quality improver for the papermaking to the pulp.